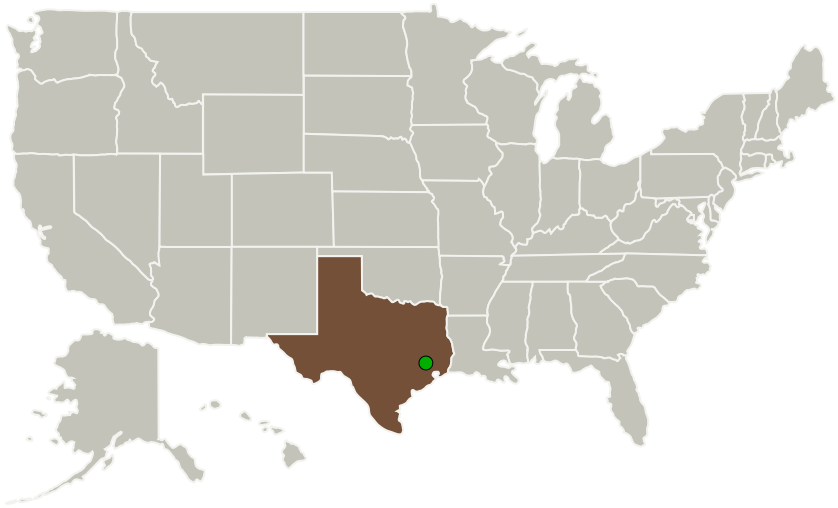
Secure Nano Electromechanical Systems-based Software-Defined Radio, Phase I

Completed Technology Project (2012 - 2012)

Project Introduction

Nanohmics proposes the integration of two major paradigms to optimize and improve current EVA communication systems. To address the implementation of tunable front-end transceivers, nanoimprint methodologies will be used to create nanoscale dimensions sub-systems designed to fit flexible printed circuits requirements. The second paradigm will bring software-defined radio (SDR) mesh networks methodologies as part of an embedded platform based on rad-hard reconfigurable devices (e.g. FPGA) with encryption capabilities.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Nanohmics, Inc.	Lead Organization	Industry	Austin, Texas
Johnson Space Center(JSC)	Supporting Organization	NASA Center	Houston, Texas

Primary U.S. Work Locations
Texas

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Project Transitions

February 2012: Project Start

August 2012: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/138486)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Nanohmics, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

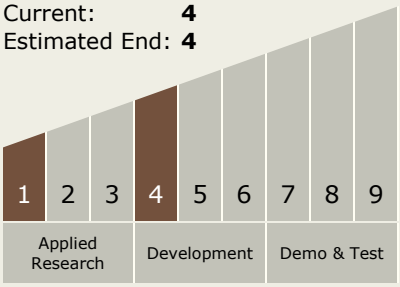
Carlos Torrez

Principal Investigator:

Ricardo Ramirez

Technology Maturity (TRL)

Start: **1**
Current: **4**
Estimated End: **4**



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Technology Areas

Primary:

- TX06 Human Health, Life Support, and Habitation Systems
  - TX06.2 Extravehicular Activity Systems
    - TX06.2.3 Informatics and Decision Support Systems

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System